

**REMARKS**

This Amendment is filed in response to the Office Action dated April 20, 2004.  
All objections and rejections are respectfully traversed.

Claims 1-28 are in the case.

Claims 17-28 were added to better claim the invention.

Claims 12, 14, and 16 were amended to better claim the invention.

At paragraph 1 of the Office Action, the disclosure was objected to for informalities. The Specification has been amended to correct a typing error. No new matter has been entered, and the Specification is believed to be in allowable condition.

At paragraph 2 of the Office Action, the Title of the invention was objected to for not being descriptive. The Title has been amended, and is believed to be in allowable condition.

A paragraphs 3 and 4 of the Office Action, claims 12 and 14 were objected to for informalities. Claims 12 and 14 have been amended, and are believed to be in allowable condition.

At paragraph 6 of the Office Action, claim 16 was rejected under 35 U.S.C. §101 for claiming non-statutory subject matter, being a claim directed to “electromagnetic signals propagating on a computer network...”

MPEP §2106(IV)(B)(1)(c) explains the patentability of natural phenomena such as electricity and magnetism. It states that claiming the physical characteristics of energy



is non-statutory, but that “... **a signal claim directed to a practical application of electromagnetic energy is statutory regardless of its transitory nature.** See *O’Reilly*, 56 U.S. at 114-119; *In re Breslow*, 616 F.2d 516, 519-521, 205 USPQ 221, 225-26 (CCPA 1980)” (emphasis added).

Applicant’s claim 16 is directed to “electromagnetic signals propagating over a computer network, said electromagnetic signals carrying instructions for execution on a processor ...” Applicant respectfully urges that because claim 16 is a signal claim directed to a practical application of electromagnetic energy, claim 16 is a statutory claim as per MPEP §2106, and is therefore in condition for allowance.

At paragraph 8 of the Office Action, claims 1, 2, 4-10, and 12-15 were rejected under 35 U.S.C. §102(e) as being unpatentable in view of Silberschatz et al., U.S. Patent No. 6,556,578 issued on April 29, 2003, hereinafter Silberschatz.

The present invention, as set forth in representative claim 1, comprises in part:

A policer based on Random Early Detection (RED), comprising:

a filter that determines a filtered virtual time debt; and

***a control law circuit that receives the filtered virtual time debt from the filter and determines whether a packet should be dropped.***

Silberschatz discloses a system for managing a buffer pool containing a plurality of queues that determines when to drop a packet, and from which queue the packet should be dropped. Silberschatz determines a **global average queue occupancy**, “*avg*,” of the plurality of queues, and uses this to compute a packet dropping algorithm. If *avg* is above a maximum threshold, packets are dropped from the buffer queues, and if *avg* is



above a minimum threshold, the system determines a probability for dropping packets. The system in Silberschatz can determine if one of the plurality of queues is the “offender” from which the packets should be dropped in order to lower the global average, *avg.*

Applicant respectfully urges that Silberschatz does not show Applicant’s claimed novel “***control law circuit that receives the filtered virtual time debt from the filter and determines whether a packet should be dropped.***”

Applicant’s claimed invention is directed toward a policer that uses a virtual time debt calculation when determining which packets to drop. By calculating the difference between the expected packet arrival time and the actual packet arrival time, it can be determined if the system has too many packets currently travelling over the network. The policer can then drop packets as they flow through, without the need for a buffer and queue arrangement, thereby reducing the overhead generally associated with queued systems. Silberschatz does not address a policer that uses a virtual time debt calculation to drop packets as they flow through, but instead is a system for dropping packets out of a system of buffer queues when the queues reach their threshold limits.

Applicant respectfully urges that the Silberschatz patent is legally precluded from anticipating the claimed invention under 35 U.S.C. §102 because of the absence from the Silberschatz patent of Applicant’s “***control law circuit that receives the filtered virtual time debt from the filter and determines whether a packet should be dropped.***”

At paragraph 10 of the Office Action, claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over Silberschatz in view of Gvozdanovic, U.S. Patent No.



6,600,720 issued on July 29, 2003. Claim 3 depends on independent claim 1, and should therefore be considered allowable according to the reasoning as set forth above.

At paragraph 11 of the Office Action, claim 11 was rejected under 35 U.S.C. §103(a) as being unpatentable over Silberschatz in view of Koodli, U.S. Patent No. 6,633,575 issued on October 14, 2003.

Koodli discloses a system for avoiding packet reordering in multiple-class, multiple-priority networks using a queue. The system isolates packets according to different classes of performance, and stores the packets in a plurality of queues. The packets in the queue storing lower-class packets are subject to dropping based on a Random Early Detection (RED) technique.

Applicant respectfully urges that neither the Silberschatz nor Koodli patents show Applicant's claimed novel *"control law circuit that receives the filtered virtual time debt from the filter and determines whether a packet should be dropped."*

Applicant's claimed invention is directed toward a policer that uses a virtual time debt calculation when determining which packets to drop, as described above. Silberschatz, again, does not address this type of policing in any way. Koodli also does not address a policer that uses a virtual time debt calculation to drop packets as they flow through, and is only a system that separates classes of packets and uses a technique that drops lower-class packets.

Applicant respectfully urges that the Silberschatz patent and the Wilkes patent, either taken singly or taken in any combination are legally insufficient to render the pres-



ently claimed invention obvious under 35 U.S.C. §103 because of the absence in each of the cited patents of Applicant's claimed novel "***control law circuit that receives the filtered virtual time debt from the filter and determines whether a packet should be dropped.***"

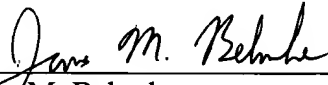
All independent claims are believed to be in condition for allowance.

All dependent claims are believed to be dependent from allowable independent claims, and therefore in condition for allowance.

Favorable action is respectfully solicited.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

  
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